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10/769,751	02/03/2004	Norihito Hatakeda	Q79547	8924

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EXAMINER	
JANKUS, ALMIS R	
ART UNIT	**PAPER NUMBER**
2628	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/769,751	HATAKEDA, NORIHITO	
	Examiner	Art Unit	
	Almis R. Jankus	2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/03/07*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's amendment of 12/03/07 has been fully considered in preparing this office action.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1-15 stand rejected under 35 U.S.C. 102(b) as being anticipated by Torborg et al.

With respect to claim 1, Torborg et al. teach the claimed display image generating means for generating display image data to be displayed on a screen based on information on at least one three-dimensional object disposed in a three-dimensional space and information on a viewpoint position, at page 359, at **Objects and Image Layers** with "As in a traditional 3D graphics system, objects are placed in the virtual environment by the application specifying their position, orientation, and scale relative to the coordinate system of the virtual environment. The transform engine uses this information, in conjunction with the viewpoint specification to construct the synthetic scene"; image area identification data storage means for storing image area

identification data that, of said display image data, specifically identifies an image area corresponding to said three-dimensional object, at **Primitive Rendering** with "The Talisman software provides the capability to render independent triangles, meshed triangles (strips and fans), lines, and points. All of these primitives are converted to triangles for rendering by the Polygon Object Processor. Triangle rendering provides numerous simplifications in the hardware since it is always planar and convex. All coordinate transformations, clipping, lighting, and initial triangle set-up is handled by the Media DSP using 32 bit IEEE floating point. During scan conversion, the Polygon Object Processor uses the linear equation parameters generated by the Media DSP to determine if the triangle is visible in the current chunk. The edge equations are also stored in the Primitive Registers until required by the Pre-Rasterizer and Rasterizer"; and image processing means for applying image defocusing processing at least locally to said display image data that represents an edge of said three-dimensional object based on said image area identification data, at the top of page 361 with "The Polygon Object Processor also supports translucent triangles, translucent textures, and triangle edge anti-aliasing, all of which fall outside of normal depth buffer operations. To properly compose pixels which are only partially covered, or have an alpha value less than 1.0, the Talisman system has special anti-aliasing hardware, which is described below".

Claims 7 and 8 are similar to claim 1 but are directed to an image generating method using a computer (claim 7), and a computer-readable medium for use in a

computer and storing a program (claim 8). Torborg et al. teach these at the **ABSTRACT**.

With respect to claim 2, Torberg et al. teach the claimed display image generating means for generating display image data to be displayed on a screen based on information on at least one three-dimensional object disposed in a three-dimensional space and information on a viewpoint position, at page 359, at **Objects and Image Layers** with "As in a traditional 3D graphics system, objects are placed in the virtual environment by the application specifying their position, orientation, and scale relative to the coordinate system of the virtual environment. The transform engine uses this information, in conjunction with the viewpoint specification to construct the synthetic scene"; elemental image generating means for generating elemental image data that represents at least one figure and is applied to a surface forming said three-dimensional object and that draws at least one elemental image in an image area corresponding to said surface forming said three-dimensional object, starting at page 357 at **POLYGON OBJECT PROCESSOR**; synthesizing means for generating synthesized display image data to be displayed on said screen by synthesizing said generated elemental image data with the display image data generated based on said information on the three-dimensional object, and image processing means for applying image defocusing processing at least locally to said synthesized display image data that represents an edge of said three-dimensional object. , at the top of page 361 with "The Polygon Object Processor also supports translucent triangles, translucent textures, and triangle edge

anti-aliasing, all of which fall outside of normal depth buffer operations. To properly compose pixels which are only partially covered, or have an alpha value less than 1.0, the Talisman system has special anti-aliasing hardware, which is described below", and at page 362 with the teaching of blur. The figure which represents an irregularity on an edge of said 3D object is inherent in digital image processing which is discrete by its very nature.

Claims 14 and 15 are similar to claim 2 but are directed to an image generating method using a computer (claim 14), and a computer readable medium for use in a computer and storing a program (claim 15). Torborg et al. teach these at the **ABSTRACT**.

Torborg et al. teach the limitations of claim 3 which further requires the image generating apparatus according to claim 2, to include storage means for storing original texture map image data to be applied to said surface forming said three-dimensional object, at page 357 in the **Memory Use** table at Texture Data Storage, wherein said display image generating means generates the display image data, when generating the display image data, by applying the original texture map image data stored in said storage means to the surface forming the three-dimensional object, at page 360 at **Primitive Rendering** with "As previously discussed, rasterization is split into two sections which are separated by several hundred clock cycles. This separation allows the first section (the Pre-Rasterizer) to determine which texture blocks will be required

to complete rendering of the triangle. This information is sent to the Texture Cache Controller so that it can fetch the necessary data from the common memory system, decompress it, and move it into the specialized high-speed on-chip memory system used by the texture filtering engine, as described below. The second section, the Rasterizer, calculates the color, translucency, depth, and coverage information, and passes this to the Pixel Engine where it can be combined with the texture information to determine the output pixel color".

With respect to claim 4, Torborg et al. teach the claimed image generating apparatus, comprising display image generating means for generating display image data to be displayed on a screen based on information on at least one three-dimensional object disposed in a three-dimensional space and information on a viewpoint position, at page 359, at **Objects and Image Layers** with "As in a traditional 3D graphics system, objects are placed in the virtual environment by the application specifying their position, orientation, and scale relative to the coordinate system of the virtual environment. The transform engine uses this information, in conjunction with the viewpoint specification to construct the synthetic scene"; elemental image generating means for generating elemental image data that is applied to a surface forming said three-dimensional object and that draws at least one elemental image in an image area corresponding to said surface forming said three-dimensional object, starting at page 357 at **POLYGON OBJECT PROCESSOR**; synthesizing means for generating synthesized display image data to be displayed on said screen by synthesizing said generated elemental image

data with the display image data generated based on said information on the three-dimensional object and image processing means for applying image defocusing processing at least locally to said synthesized display image data, at the top of page 361 with "The Polygon Object Processor also supports translucent triangles, translucent textures, and triangle edge anti-aliasing, all of which fall outside of normal depth buffer operations. To properly compose pixels which are only partially covered, or have an alpha value less than 1.0, the Talisman system has special anti-aliasing hardware, which is described below", and at page 362 with the teaching of blur, and storage means for storing original texture map image data to be applied to said surface forming said three-dimensional object, at page 357 in the **Memory Use** table at Texture Data Storage, wherein said display image generating means generates the display image data, when generating the display image data, by applying the original texture map image data stored in said storage means to the surface forming the three-dimensional object, at page 360 at **Primitive Rendering** with "As previously discussed, rasterization is split into two sections which are separated by several hundred clock cycles. This separation allows the first section (the Pre-Rasterizer) to determine which texture blocks will be required to complete rendering of the triangle. This information is sent to the Texture Cache Controller so that it can fetch the necessary data from the common memory system, decompress it, and move it into the specialized high-speed on-chip memory system used by the texture filtering engine, as described below. The second section, the Rasterizer, calculates the color, translucency, depth, and coverage information, and passes this to the Pixel Engine where it can be combined with the

texture information to determine the output pixel color", and wherein said original texture map image data includes synthesizing area identification information for identifying an area, on which image data different from the original texture image can be synthesized, at page 357 at **POLYGON OBJECT PROCESSOR** with "Since polygons are processed in 32 x 32 chunks, triangle processing will typically not start at a triangle vertex. This block computes the intersection of the chunk with the triangle and computes the values for color, transparency, depth, and texture coordinates for the starting point of the triangle within the chunk", and said elemental image generating means determines a drawing position of the elemental image based on the synthesizing area identification information of said original texture map image data, at page 360 at **Primitive Rendering** with "The Talisman software provides the capability to render independent triangles, meshed triangles (strips and fans), lines, and points. All of these primitives are converted to triangles for rendering by the Polygon Object Processor. Triangle rendering provides numerous simplifications in the hardware since it is always planar and convex. All coordinate transformations, clipping, lighting, and initial triangle set-up is handled by the Media DSP using 32 bit IEEE floating point. During scan conversion, the Polygon Object Processor uses the linear equation parameters generated by the Media DSP to determine if the triangle is visible in the current chunk. The edge equations are also stored in the Primitive Registers until required by the Pre-Rasterizer and Rasterizer".

With respect to claim 5, Torborg et al. teach the claimed image generating apparatus,

comprising display image generating means for generating display image data to be displayed on a screen based on information on at least one three-dimensional object disposed in a three-dimensional space and information on a viewpoint position, at page 359, at **Objects and Image Layers** with "As in a traditional 3D graphics system, objects are placed in the virtual environment by the application specifying their position, orientation, and scale relative to the coordinate system of the virtual environment. The transform engine uses this information, in conjunction with the viewpoint specification to construct the synthetic scene"; elemental image generating means for generating elemental image data that is applied to a surface forming said three-dimensional object and that draws at least one elemental image in an image area corresponding to said surface forming said three-dimensional object, starting at page 357 at **POLYGON OBJECT PROCESSOR**; synthesizing means for generating synthesized display image data to be displayed on said screen by synthesizing said generated elemental image data with the display image data generated based on said information on the three-dimensional object, and image processing means for applying image defocusing processing at least locally to said synthesized display image data, at the top of page 361 with "The Polygon Object Processor also supports translucent triangles, translucent textures, and triangle edge anti-aliasing, all of which fall outside of normal depth buffer operations. To properly compose pixels which are only partially covered, or have an alpha value less than 1.0, the Talisman system has special anti-aliasing hardware, which is described below", and at page 362 with the teaching of blur, and storage means for storing original texture map image data to be applied to said surface forming

said three-dimensional object. at page 357 in the **Memory Use** table at Texture Data Storage, wherein said display image generating means generates the display image data, when generating the display image data, by applying the original texture map image data stored in said storage means to the surface forming the three-dimensional object, at page 360 at **Primitive Rendering** with "As previously discussed, rasterization is split into two sections which are separated by several hundred clock cycles. This separation allows the first section (the Pre-Rasterizer) to determine which texture blocks will be required to complete rendering of the triangle. This information is sent to the Texture Cache Controller so that it can fetch the necessary data from the common memory system, decompress it, and move it into the specialized high-speed on-chip memory system used by the texture filtering engine, as described below. The second section, the Rasterizer, calculates the color, translucency, depth, and coverage information, and passes this to the Pixel Engine where it can be combined with the texture information to determine the output pixel color", and wherein said elemental image data includes synthesizing area identification information that identifies an area, in which image data different from the elemental image can be synthesized, at page 357 at **POLYGON OBJECT PROCESSOR** with "Since polygons are processed in 32 x 32 chunks, triangle processing will typically not start at a triangle vertex. This block computes the intersection of the chunk with the triangle and computes the values for color, transparency, depth, and texture coordinates for the starting point of the triangle within the chunk", said image processing means determines at least one portion, to which the image defocusing processing is applied, based on the synthesizing area

identification information included in each of said elemental image data and said original texture map image data, and applies the image defocusing processing to said portion determined, at page 360-361 at **Texture Mapping**, **Hidden Surface Removal**, and **Anti-Aliasing**.

Torborg et al. teach the limitations of claim 6 which further requires said elemental image data or said portion, to which image defocusing processing is applied, is changed with time. Torborg et al. teach this at the **ABSTRACT**, with animation.

Claims 11, 12 and 13 require the same limitations as in claim 6, and are rejected under the rationale presented for claim 6.

Claim 9 further requires the display image data to be generated in accordance with the image generating method as claimed in claim 7. Torborg et al. teach this at the **ABSTRACT**.

Torbord et al. teach the limitations of claim 10 which further requires the image generating apparatus according to claim 4, wherein said elemental image data includes synthesizing area identification information that identifies an area, in which image data different from the elemental image can be synthesized, at page 357 at **POLYGON OBJECT PROCESSOR** with "Since polygons are processed in 32 x 32 chunks, triangle processing will typically not start at a triangle vertex. This block computes the

intersection of the chunk with the triangle and computes the values for color, transparency, depth, and texture coordinates for the starting point of the triangle within the chunk", said image processing means determines at least one portion, to which the image defocusing processing is applied, based on the synthesizing area identification information included in each of said elemental image data and said original texture map image data, and applies the image defocusing processing to said portion determined, at page 360-361 at **Texture Mapping**, **Hidden Surface Removal**, and **Anti-Aliasing**.

4. Applicant's arguments filed 12/03/07 have been fully considered but they are not persuasive.

In the remarks, applicant argues that Torborg fails to disclose image area identification data, storing image area identification data, and that a triangle is not an image area but rather, a polygon in three-dimensional space. Image area identification data is so broad as to encompass any image that is displayed. A triangle in 3D space rendered on a display is still a triangle, and it occupies an area determined by image space coordinates.

Applicant further argues that Torborg fails to disclose that the texture map image data includes any information which identifies an area on which image data different from the original texture image can be synthesized; and that Torborg fails to distinguish between elemental image and original texture map data. However, in texture mapping

the map is rarely displayed as it originally exists. It first requires a transformation to match the orientations and scale of the 3D image.

Finally applicant argues that Torborg applies anti-aliasing to the entire scene rather than to a portion as required by claim 5. However, at page 361 first paragraph Torborg teaches a processor that supports triangle edge anti-aliasing.

With respect to the 35 U.S.C. 101 rejection, the examiner respectfully disagrees that signals are statutory subject matter. Accordingly, the rejection is maintained.

5. Claims 8 and 15 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are directed to computer readable medium for use in a computer and storing a program. However, the instant specification includes a server that delivers the program in the definition of a computer readable medium. A server delivers a program by using a signal or a waveform. Program signals and waveforms fail to fall within any of the four statutory classes of invention.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Almis R. Jankus whose telephone number is 571-272-7643. The examiner can normally be reached on M-F, 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Razavi can be reached on 571-272-7664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJ

ALMIS R. JANKUS
PRIMARY EXAMINER